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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.   |
|--|-------------|----------------------|---------------------|--------------------|
| 10/723,263   | 11/26/2003  | Gaetan L. Mathieu    | FACT-01001US1       | 8754               |
| 23910  | 7590        | 06/27/2006           | EXAMINER            |                    |
| FLIESLER MEYER, LLP<br>FOUR EMBARCADERO CENTER<br>SUITE 400<br>SAN FRANCISCO, CA 94111 |             |                      |                     | CAZAN, LIVIUS RADU |
| ART UNIT   |             | PAPER NUMBER         |                     |                    |
|  |             |                      |                     | 3729               |

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |                |
|------------------------------|-----------------|----------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s)   |
|                              | 10/723,263      | MATHIEU ET AL. |
|                              | Examiner        | Art Unit       |
|                              | Livius R. Cazan | 3729           |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 26 November 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date: _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/26/2003</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-7, drawn to a method of manufacturing a first type of vertical feed through, classified in class 29, subclass 852.
  - II. Claims 8-17, drawn to a method of manufacturing a second type of vertical feed through, classified in class 29, subclass 876.
  - II. Claim 18-20, drawn to a substrate, classified in class 439, subclass 66.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are directed to related processes. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, Group I does not require stacking a first electrical contact and a sacrificial element, as required by Group II. Group II does not require providing an electrical contact cap that extends partially into a hole and partially outside a hole in a substrate, as required by Group I. Neither group is an obvious variant of the other. Further, the two processes have a different effect, i.e. the process of Group I results in a capped hole for receiving a probe,

whereas the process of Group II produces a hole having both a fixed cap and a removable cap.

3. Inventions I and III and likewise inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by process that comprises forming a dielectric around an electrical contact, instead of inserting the contact in a hole of a substrate. Forming a dielectric around a contact still results in a dielectric having a hole and a contact within the hole, but the process is materially different.

4. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Thomas Ward on 6/12/2006 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Specification***

7. The use of trademarks (such as KOVAR and COBRA) has been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks. Applicant is asked to thoroughly check the application for all instances of improper trademark use and make appropriate corrections.

8. The disclosure is objected to because of the following informalities:

- On page 13, para. [0046], Ins. 10 and 12, "5,467,211" should read --5,476,211--
- On page 16, para. [0053], line 5, "multiplayer" should probably read --multi-layer--
- On page 18, para. [0060], line 2, "an center" should probably read --a center--
- On page 19, para [0063], line 1, "power pin supply" should probably read --power supply pin--
- On page 19, para. [0064], line 4, "another the other" should probably read -- another--

Appropriate correction is required. The Applicant is urged to carefully read the specification and correct these and any other informalities that may still be present in the application.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuzma (US5046242).

Regarding claims 1-3, Kuzma discloses a method of making a vertical feed-through in a substrate, the method comprising providing an electrical contact cap (34 in Figs 3, 4, and 6C) in a hole in a green sheet (32 in Fig. 4; see col. 4, ln. 28) substrate, wherein the cap extends partially into the hole (portion 34c, Fig 6C) and partially outside the hole (portion 34a, Fig. 6C), wherein a portion of the hole is open (34c in Fig. 4) for insertion of a probe on a second substrate to electrically contact the probe with the cap in the hole (the substrate is certainly capable of having a probe inserted into the hole so as to contact the cap). The cap is pressed into the hole (step 102 in Fig. 6) and thereafter it is heated (step 103, Fig. 6) to form a ceramic material around the cap.

Regarding claim 4, Kuzma discloses inserting a resilient spring probe into an opening of the cap (see Figs. 3 and 4; pin 30 having conical head 30a is inserted into the opening 34c).

Regarding claim 6, the cap comprises laterally protruding portions extending into the substrate to hold the cap within the substrate (see conical portion 34c of "cap" 34 in Fig. 6C).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuzma in view of Applicant's admitted prior art (APA).

Regarding claim 4, to the extent the applicant disagrees that Kuzma discloses inserting a resilient spring probe into an opening of the cap, it is alternatively argued that such a modification would have been obvious:

Kuzma discloses the same invention as the applicant, except for a resilient spring probe being inserted in an opening of the cap.

APA teaches the use of resilient spring probes on probe cards so as to temporarily connect to electrical components (page 2, para. [0006]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, in view of the teachings of APA, to insert a resilient spring probe into the opening (34c in Fig. 6C) of the cap (34 in Fig. 6C) in order to make electrical contact between the probe and the conductive cap.

Regarding claim 5, Kuzma discloses the same invention as the applicant, except for plating at least a portion of the hole with an electrically conductive material.

APA teaches plating through holes in a substrate so as to allow connection between electrical components on different layers of printed circuit boards and to form

interconnect elements enabling one PCB to be connected to components on a separate PCB (page 1, para. [0002]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to plate at least a portion of the hole with an electrically conductive material, in view of the teachings of APA, in order to ensure low resistance between the metal of the cap and a probe that may be inserted in the hole.

13. To the extent the Applicant disagrees that Kuzma discloses laterally protruding portions for holding the cap within the substrate, Claim 6 is alternatively rejected, together with claim 7, under 35 U.S.C. 103(a) as being unpatentable over Kuzma in view of Marin (US3378622).

Regarding claim 6, Kuzma discloses the same invention as the applicant except for laterally protruding portions for holding the cap within the substrate.

Marin teaches forming lateral protruding portions in one material so as to be securely held within a second material. See Fig. 5 for example.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Kuzma by providing the portion of the cap inserted in the substrate with lateral protrusions so as to hold the cap within the substrate even more securely than without any protrusions.

Regarding claim 7, Kuzma discloses the same invention as the applicant, except for the portion of the cap extending outside of the substrate being cylindrical and having a diameter larger than the diameter of a second portion located within the substrate, this

Art Unit: 3729

second portion also being cylindrical, and the second portion has laterally protruding regions so as to secure the cap within the substrate.

At the time the invention was made, it would have been obvious matter of engineering design choice to a person of ordinary skill in the art to form the cap in the shape described above, because Applicant has not disclosed that this particular shape provides an advantage, is used for a particular purpose, or solves a stated problem that would not be provided or solved by other cap shapes. One of ordinary skill in the art, furthermore, would have expected the claimed shape and other shapes to work equally well.

Therefore it would have been *prima facie* obvious to modify the invention of Kuzma to obtain the invention as specified in claim 7 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Kuzma. Regarding the lateral protrusions, see the rejection of claim 6.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Livius R. Cazan whose telephone number is (571) 272-8032. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LRC 06/22/2006



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